

# Compliant Polysulfide Primer Testing

## ***Background:***

The Air Force, in the past, had used a Courtalds PR 1432 GP primer to meet Mil-P-87112 specification requirements. The primer met all AF performance requirements until the implementation of more stringent emission regulations stated in the 1998 National Emission Standards for Hazardous Air Pollutants (NESHAP). At that time, use of that specific product was discontinued and the specification cancelled. Given the flexibility of the polysulfide primer, the AF derived outstanding corrosion and general coating system performance over the last fifteen years of use on wide body aircraft.

Current approved primers on the QPL for Mil-P-23377G do not have the flexibility of the polysulfide primers and cannot bridge the fastener heads. This encouraged crack propagation and degradation of the coating system permitting corrosion under the coating. This is especially prevalent on larger aircraft such as cargo planes, bombers, and tankers. There have been recent efforts by PRC DeSoto (formerly Courtalds) to reformulate the PR 1432GP to meet the NESHAP regulations while maintaining its past performance.

**Project Sponsor/Customer:** USAF ALCs, Wide body aircraft SPDs

**Period of Performance:** Apr 00 – Sep 01

## ***Objective:***

The effort proposed under this task will look at the new PRC-DeSoto PR-1432 GV formulations and test them against the performance requirements of the Mil-P-87112 specification, as well as, the Mil-P-23377G primer specification. An initial task of the FY00 project is to determine the optimal solvent system for equipment cleaning. Next, the general requirements of the camouflage Mil-PRF-85285C over the PR-1432-GV will be compared to the same properties when coated over PR-1432-GP. Data will be collected or assembled evaluating these two primers under several topcoats to determine the best performing system. Data from the FY99 quick response and APC projects will be leveraged.

## ***Status:***

Most of the preliminary test plan tasks have been completed. The exception being the Xenon arc aging of the weatherability panels. The tasks of the secondary test plan are

40% complete. Fluid immersion data for Skydrol shows a potential deficiency in 1432GV in comparison to 1432GP. Other fluids do not show a significant difference. Water immersion has shown impacts on both the 1432GP and 1432GV, however, insufficient data exists to make any conclusions at this point. Pencil hardness data to date has not meet expectations, essentially all samples and references have failed. Efforts continue in preparation and testing of panels under nominal environmental conditions for accelerated weathering and variable environmental conditions for fluid resistance.

**Final Report:** Planned completion Sep 02

**As of Date:** Jan 01